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ABSTRACT

In a study designed to determine if weekly newspapers are more thoroughly read than daily newspapers, 14 half-page articles on energy were placed in three daily and two weekly newspapers in Wisconsin and Iowa. The selected papers provided a wide range of circulations and citizen interests. Random samples of subscribers to each newspaper were surveyed both before and after the energy stories appeared to measure their knowledge of the material presented. In addition, the survey elicited information about the respondents' uses of energy, their attitudes about the energy situation, and their media use in general and specifically for energy information. The results revealed that although subscribers to both daily and weekly newspapers were equally likely to recall reading articles about energy that appeared in them, significantly higher learning took place for daily newspaper subscribers. Sex, age, and education were all compared by type of newspaper and knowledge of energy. Results showed no significant interaction between any of these variables and type of community newspaper. (FL)

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Differential Learning from Daily and Weekly Newspapers: A Field Test in Five Communities

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For years, evidence has suggested that weekly newspapers are better read than daily newspapers. Schramm and Ludwig, in their survey of research on weekly newspapers from 1938-1948, noted that total time spent with a weekly newspaper was roughly the same as time spent with a daily newspaper (Schramm and Ludwig, 1951). Since the daily often has more pages, that meant that, in general, time spent per page with the weekly would be higher.

In their study, Schramm and Ludwig noted that the average reader of a weekly newspaper reads 36 percent of all items in the paper, and 41 percent of all news items. For a daily paper, readers read about 25 percent of all items. For both, total time spent with the newspaper was about 50 minutes. Twenty years later, in 1973, readership of the average daily had dropped to 34 minutes per weekday (ANPA Report No. 5, 1973). Readership of all forms of print media have declined somewhat as competition from TV has increased.

The more intensive readership per page for weeklies has suggested to many that weekly newspapers might be an excellent outlet for news releases, educational materials, and features of many kinds. In fact, weekly editors are constantly deluged by news releases and other materials for their papers. But does time spent per page really indicate what the audience is getting out of the material?

The ANPA's Research Report No. 5 reported that time spent in itself

was not a reliable predictor of understanding of content. Although the report did not address daily versus weekly readership patterns specifically, it indicated that time spent could not explain what an audience learns from its newspaper. They conclude:

> Earlier analyses (including one in 1961 by Audits and Surveys) have shown that time spent reading is an imperfect measure of thoroughness of reading. Less well-educated people, readers at the lowest income level, and the elderly may spend more time reading and yet read less thoroughly than better-educated people who are able to read faster and scan more efficiently. For this reason, there are in the aggregate no clear patterns in reading time by demographic groups. It may be observed, however, that it is the oldest, least well-educated, and poorest readers who are most likely to spend more than an hour with their daily papers. (ANPA Report No. 5 1973)

Grunig suggests that a third factor---the purpose of the reader---also must be considered. Does the reader have an instrumental purpose---that is, does he want some specific information he has picked up the newspaper to find? Or is he passing time or seeking enjoyment from the newspaper---lacking the motive of seeking out information. Grunig labeled the latter approach consummatory. He suggested that the differing purposes would result in different patterns of both readership and learning (Grunig, 1979, p. 7)

The core of the concern for the editor is what kinds of information readers expect and search out in their publication. Readers of weekly newspapers seek out news about local government, correspondence reports, and local advertising. A study of a small Oklahoma daily found that there was a high rate of readership of "local" items in the newspaper, including both local news and local advertising (Grotta, Larkin and De Plois, 1975). National and international news, in contrast, had much poorer readership. One suggestion from this study is that information which is localized for

a community paper might expect high readership, although as content departs from its local context readership declines. The Oklahoma study confined itself to a small daily, leaving open the question of whether or not the same pattern would be found for weekly newspapers.

Research also has suggested that factors such as page, size of text, form, geographic significance, source and topic may also be important in determining level of readership. McCombs and Mauro found each of these elements was significantly related to readership (McCombs and Mauro, 1977) Since the current study did not exercise control over the layout or size of type, these important factors could not be controlled. However, all five papers in the study used the test articles on an inside page, and most used similar layout techniques. Only two papers, the Appleton Post-Crescent and the Dodgeville Chronicle, did not use illustrations supplied with the articles.

The Study

The present study presented nearly identical information about energy in three daily newspapers and two weekly newspapers in Wisconsin and Iowa. A pre-test and post-test measured knowledge of the material presented as well as several measurements of interest in the topic and media usage.

Two weekly newspapers, the Iowa Falls, Iowa, Times-Citizen and the Dodgeville, Wisconsin, Chronicle, serve agriculturally-based communities, and are located more than 30 miles from a community with a daily newspaper. The Iowa Falls paper publishes twice per week, but the earlier edition carries a different name. Virtually all readers subscribe to both papers.

The three daily newspapers consist of two small dailies, the Ames Daily Tribune, Ames, Iowa, a university community; and the Rhinelander, Wisconsin, Daily News, which serves a recreational and forest products center in the

northern part of the state. The Appleton Post-Crescent is a medium size daily serving a series of industrial-based communities in east central Wisconsin. Data on these papers is given in Table 1.

Table 1

Information on the Five Test Communities

Newspaper		Circulation	City Population
Appleton Post-Crescent	(daily)	51,617	60,637
Rhinelander Daily News	(daily)	7,317	8,218
Ames Daily Tribune	(daily)	10,658	39,505
Iowa Falls Times-Citizen	(weekly)	5,017	6,454
Dodgeville Chronicle	(weekly)	6,000	3,225

The papers were purposefully selected to provide a wide range of circulations and citizen interests. In each case, the editors of the papers agreed to run a series of 14 half-page articles on energy. The articles were prepared by Thomas J. Murray, a science writer with the College of Engineering at the University of Wisconsin, Madison. Each of the articles in the series was localized for the particular community in which it appeared by using local electric rates, local computer simulations for costs of solar energy, etc. However, on the whole, essentially the same information was conveyed. One of the articles is presented in Appendix 1.

In each community, two random samples of 250 to 300 persons each were drawn of newspaper subscribers. The first sample of subscribers was contacted in January, 1979, before the series began. The second sample was contacted

in June, 1979, following the conclusion of the weekly series. The two independent samples were used to avoid the problem of sensitization effects from receiving the first energy questionnaire.

Each survey contained a 23-item knowledge test of local energy facts and concepts. In addition, the surveys obtained information about the respondents' uses of energy, attitudes about the energy situation, and media use in general and specifically for energy information.

In each case, the rate of return for the mail questionnaire exceeded 67 percent. In every case but one, it exceeded 70 percent.

Results

First, the study examined the attention paid by daily and weekly newspaper subscribers to energy information in general, and then specifically to the series of articles on energy that appeared in the newspapers. To examine media use for energy in general, respondents were asked to indicate "which of the following have been sources of information about energy for you during the past few months."

As Table 2 shows, reliance on certain media remained relatively constant during the January to June period of 1979 for energy information. There was a decline in use of utilities as sources of information, and a significant gain (P less than .05 X^2 test) for newspapers as a source of information for daily subscribers.

Of more interest, however, are the differences between daily and weekly subscribers in uses of media for energy information at both Time 1 and Time 2. In every case except radio, utilities and extension, those who subscribe to home town dailies listed more sources of information than did those who subscribed to weeklies. The margin between daily and weekly readers was statistically significant

for TV, newspapers, magazines, books or journals, friends and neighbors, and contractors.

Table 2

Sources of Information about Energy

Respondents Could Select as Many Categories as Were Appropriate

Medium	Appleton		Rhinelander		Ames		Dodgeville		Iowa Falls	
	Jan.	June	Jan.	June	Jan.	June	Jan.	June	Jan.	June
TV	92%	94%	88%	89%	97%	86%	83%	82%	85%	86%
Radio	60	67	53	59	57	61	61	64	63	64
Newspaper	91	96	84	90	89	93	82	84	82	85
Magazines	53	63	52	53	65	67	47	48	45	46
Books/Jrnls	19	16	23	18	31	31	13	12	16	11
Friends	26	29	29	25	30	40	24	26	20	24
Utilities	42	32	33	30	36	30	34	31	36	30
Contractor	14	12	16	15	17	19	9	10	16	10
Extension	2	3	9	5	9	6	16	12	13	9

Many of the weekly subscribers in the study also read a daily newspaper from another city. In Iowa Falls, 87 percent of the weekly subscribers read at least a Sunday paper from another city, usually the Des Moines Sunday Register. In Dodgeville, 81 percent of weekly subscribers also read at least a Sunday newspaper from another city, usually the Wisconsin State Journal from Madison. Thus, the differences in seeking out energy information are not due simply to a lack of sources in more rural areas.

When asked to list their best source of information about energy, approximately one quarter to one third of those in each community listed TV, and about the same number listed newspapers. Magazines were almost twice

as likely to be mentioned as a best source among daily community subscribers as among weekly community subscribers. See Table 3.

Table 3

Best Sources of Energy Information for 5 communities
(Pre---Jan, 1979; Post-June, 1979)

		Appleton	Rhinelander	Ames	Iowa Falls	Dodgeville
TV	Pre	23%	35%	22%	29%	29%
	Post	31	29	25	29	25
Radio	Pre	4	4	2	8	4
	Post	2	3	2	4	1
News-	Pre	33	19	21	22	26
paper	Post	32	28	25	25	24
Maga-	Pre	11	8	13	7	6
zine	Post	14	9	13	6	4
No	Pre	29	33	42	35	32
Source	Post	21	31	35	35	44

Specifically for the target newspapers themselves, respondents were more likely to name the target newspaper as their best source in June in all cases except one---Appleton. In Appleton, the number naming the Post-Crescent as their best source of information declined by 3 percent. However, even with this decline, Appleton still led all other newspapers studied as a source of energy information by a factor of more than 2 to 1. See Table 4.

Table 4

Selection of Test Newspaper as Best Source of Energy Information

		Appleton	Rhinelander	Ames	Iowa Falls	Dodgeville
Best Energy Info Source	Pre	28%	9%	2%	2%	1%
	Post	25	15	10	4	5

From these data we can see that, overall, there was not a great deal of change in media use during the period. Weekly community newspaper subscribers tend to score lower on most forms of media usage. Daily community newspaper subscribers significantly increased their use of newspapers as a source of energy information in June as compared to January.

To measure actual recall of the energy series itself, respondents were asked to indicate if they remembered reading any of the series articles. Results show that readers of weekly newspapers were slightly more likely to say they had read at least one of the series articles than were daily readers. Results are shown in Table 5.

Table 5

Readers Recalling Reading at Least One Energy Series Article

	Appleton	Rhinelander	Ames	Iowa Falls	Dodgeville
Recall Reading One Article	67%	76%	62%	77%	72%
Don't Recall Reading One	19	13	28	13	18
Not Sure	13	6	7	3	6

As a second measure of attention paid to series articles, respondents were asked if they could recall reading a specific series article on solar energy, which reported on results of a computer simulation testing how economical solar energy would be for their community. Table 6 shows that weekly community subscribers were slightly more likely to recall having read this article. One possible explanation for this is that there were fewer articles in general about energy in the two weekly papers, and therefore it was easier to recall

a specific article. It is also possible that the weekly articles were in fact better read than the daily articles.

Table 6

Recall of Specific Article about Solar Energy

	Appleton	Rhinelander	Ames	Iowa Falls	Dodgeville
Recall Article	18.0%	18.9%	17.4%	24.7%	21.0%
Do Not Recall Article	64.0	63.9	65.2	62.8	57.3
Not Sure	18.0	17.0	17.4	12.3	21.6

Respondents were then asked to indicate how intensively they read the series articles. Results showed no significant differences between daily and weekly newspaper readers. As Table 7 shows, more than one-quarter of respondents for both daily and weekly newspapers said they read more than one of the series articles with some care.

Results thus far suggest that there should not be a great deal of difference between learning about energy from a daily or weekly newspaper. However, when the change in scores from January to June was examined for each community, it was found that readers in Appleton increased their scores on the energy test at twice the rate of both the communities with small dailies and the weeklies. Appleton readers increased their mean score from 8.07 items correct to 9.34, an increase which is significant at the .001 level. The only other community to post a significant gain in energy knowledge was Rhinelander, which increased its score by seven tenths of a point. Overall, Table 8 shows the mean scores on the 23-item knowledge test increased by slightly more than

six-tenths of a point, which, given the large N, makes it statistically significant.

Table 7

Intensity of Readership of Energy Articles for Five Communities

	Appleton	Rhinelander	Ames	Iowa Falls	Dodgeville
Glanced at or skimmed one article	10%	17%	14%	19%	18%
Glanced at or skimmed more than 1 article	15	12	12	14	18
Read with care one article	17	19	15	13	15
Read with care more than 1 article	27	30	21	29	24
Clipped and Saved at least one article	1	3	2	2	2
Did not read	31	19	36	24	24

Table 8

Change in Energy Scores for Five Communities

Community	Pretest Score	Post Test Score	Sig.
Appleton	8.07	9.34	.0007
Rhinelander	7.72	8.42	.0354
Ames	9.54	10.14	.1595
Iowa Falls	7.72	7.89	.6137
Dodgeville	7.08	7.63	.1258
Overall:	7.95	8.60	.001

Pre-test N= 1101 Post test N= 1068

Since readership and intensity figures do not suggest why Appleton readers would improve their scores more, a score of interest in energy was constructed. The score combines several questions and weighted responses.

It first gave respondents one point each if they requested any of three types of information about energy from university publications or newspaper articles. Choices listed on the questionnaire were:

a)more information on my personal use and saving of energy;

b)more information on new technologies, new energy sources;

c)more information on national and state energy: where it comes from and what it is used for;

Second, it gave respondents one point if they said they would like the media to spend more time on energy than they now do. Third, it gave up to four points for time spent in the past several months reading about energy. Time choices ranged from almost none to more than 10 hours.

Results showed that the higher the score on information seeking about energy, the better the respondents did on the energy test. As Table 9 shows, those with the lowest information score got fewer than 4 points on the test, while those with an information score of 8 received more than 13 points on the test.

Table 9

Information Seeking Behavior for Energy Information Compared to Energy Knowledge

Information Seeking Score	Mean Score on 23-item Test
0 (lowest)	3.7
1	6.1
2	6.6
3	7.4
4	9.1
5	9.7
6	10.2
7	10.4
8	13.1

When these results are broken down by community, daily community newspaper subscribers tended to have significantly higher information seeking scores than did weekly community newspaper subscribers. Table 10 shows that the three daily newspapers are tightly grouped on one end of the distribution, and the two weeklies are grouped at the other end.

Table 10

Energy Information Seeking Behavior in Five Communities

Community	Mean score on Energy Information Seeking
Appleton (Daily)	4.54
Rhinelander (Daily)	4.45
Ames (Daily)	4.69
Dodgeville (Weekly)	4.05
Iowa Falls (Weekly)	4.07

Thus, despite readership scores and intensity of readership measurements which suggest equivalent attention is being paid to the energy articles, reported information-seeking behavior for energy would suggest more attention is being paid to energy in general and possibly the energy series articles by daily community newspaper subscribers.

Is there something distinctive about the amount of attention given to energy information in a weekly newspaper, or could some other factor or factors be explaining the difference in scores and information-seeking behavior? To explore this further, the socio-economic variables of sex, age, and education were examined.

Results show that despite the fact that females comprise only 37.7 percent of the overall sample, more than half of those who do not read a daily newspaper are women. One possibility is that women did glance at or read the energy articles,

but were not as interested in them as men were, and consequently did not learn as much from them. This notion is supported by an examination of information seeking, which shows that women are significantly less likely to seek out information on energy and read it than are men. This is shown in Table 11.

Table 11

Sex of Respondent by Information Seeking about Energy

Sex	Information Seeking Mean Score
Male	4.6
Female	3.9

(F= 31.34 for 1-way ANOVA. Sig. at .001)

However, a 2-way analysis of variance attempting to relate knowledge score to sex of respondent and type of community showed that while both sex and type of community are significantly related to score, the interaction between type of community and sex is not significant. In other words, if there are more women among weekly newspaper readers, and if they seek information less than men do about energy, the effects are not consistent enough to explain the difference in scores between daily subscribers and weekly subscribers.

Two-way analyses of variance were also performed for education and age. In both cases, similar results to those for sex occurred. Age and education are both significantly related to score, but the interaction between them and type of newspaper was not significant. These results are shown in Table 12.

Conclusion

Although subscribers to both daily and weekly newspapers appear to be equally likely to recall reading articles about energy which appear in them,

significantly higher learning took place for daily newspaper subscribers.

Energy information-seeking patterns are suggested as one explanation for the difference in learning, since those who are daily subscribers are

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Table 12

Analyses of Variance for Knowledge Score by Type of Community Newspaper by Age, Sex and Education

Type of Newspaper By Sex for Knowledge Score	SS	DF	MS	F	Sig.
Main Effects	2032.9	2	1016.4	67.9	.000
Type of Paper	390.0	1	390.0	26.1	.000
Sex	1520.8	1	1520.8	101.729	.000
2-way interactions	18.9	1	18.9	1.2	.261
Type of Paper / Sex	18.9	1	18.9	1.2	.261
Explained	2051.8	3	683.9	45.7	.000
Residual	15413.1	1031	14.9		
Total	17464.9	1034	16.9		

Type of Newspaper by Age for Knowledge Score	SS	DF	MS	F	Sig.
Main Effects	1610.3	4	402.5	25.8	.000
Type of Paper	376.9		376.9	24.2	.000
Age	1066.5	3	355.5	22.8	.000
2-way interactions	81.0	3	27.0	1.7	.158
Type of Paper/ Age	81.0	3	27.0	1.7	.158
Explained	1691.4	7	241.6	15.5	.000
Residual	16389.5	1052	15.6		
Total	18081.0	1059	17.1		

Type of Newspaper by Education for knowledge Score	SS	DF	MS	F	Sig.
Main Effects	2909.7	7	415.7	29.1	.000
Type of Newspaper	189.4	1	189.4	13.2	.000
Education	2372.6	6	395.4	27.6	.000
2-way interactions	60.56	6	10.1	.7	.645
Type of paper/Education	60.56	6	10.1	.7	.645
Explained	2970.3	13	228.4	15.9	.000
Residual	14824.2	1037	14.3		
Total	17794.5	1050	16.9		

significantly more likely to seek out energy information than are those from weekly newspaper communities. Results showed that those who sought out more sources of information tended to score more highly on the energy knowledge test.

At this point, however, with available data, it is difficult to explain why this difference in information-seeking behavior occurs in the weekly newspaper communities. Sex, age and education were all compared by type of newspaper and score. Results showed that there was no significant interaction between any of the three socio-economic indicators and type of community.

Results suggest that readers of weekly newspapers are different in information seeking behavior and knowledge about energy from those in communities with daily newspapers. Future studies could profitably focus on differences between weekly and daily readers in terms of what they seek to read in their papers, how much time they spend with various articles, and what they learn from them.

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